

### **REMARKS**

Claims 11, 18, 27, 79-80, 86, 149, 152, 155, 158, 160, 164, and 168 are hereby cancelled. Claims 10, 17, 25, 26, 81-85, 87, and 147 have been amended by this Amendment. Claims 169-189 have been added by this Amendment. Therefore, claims 7-10, 12-17, 19-26, 28-29, 78, 81-85, 87-89, 146-148, 150-151, 153-154, 156-157, 159, 161-163, 165-167, and 169-189 are presently pending.

1. **INTERVIEW SUMMARY**

The Applicant thanks the Examiner for his interview on December 7, 2006. The Applicant and the Examiner discussed proposed amendments to the claims, as well as the teachings of Jones. Specifically, the Examiner and the Applicant discussed FIGS. 1 and 3 of Jones. Finally, the Examiner and the Applicant discussed Pitrowski et al. (U.S. Pat. No. 4,499,515).

2. **35 U.S.C. § 103 REJECTION OVER MCINERNY IN VIEW OF CRANE AND JONES**

Claims 7-12, 14-29, 78-89, and 146-168 are rejected under 35 U.S.C. § 103(a) as being unpatentable over McInerny (U.S. Pat. No. 5,761,089) in view of Crane et al (U.S. Pat. No. 5,151,607) and further in view of Jones (U.S. Pat. No. 5,255,129).

It is respectfully submitted that the combination of McInerny, Crane et al., and Jones fail to teach or suggest each and every element of pending claims 7-29, 78-89, and 146-168. It is further submitted that the combination of McInerny, Crane et al., and Jones fail to teach or suggest each and every element of new claims 169-190.

An obviousness rejection under §103 requires that all the limitations of a claim must be taught or suggested by the prior art. M.P.E.P. § 2143.03 (citing *In re Royka*, 490 F.2d 981, 985, 180 U.S.P.Q. 580, 583 (C.C.P.A. 1974)). A *prima facie* case of obviousness, *inter alia*, requires:

(i) a “suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings,” and

(ii) that “the prior art reference[s] . . . must teach or suggest all the claim limitations.” See M.P.E.P. § 2143 (citing *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991)).

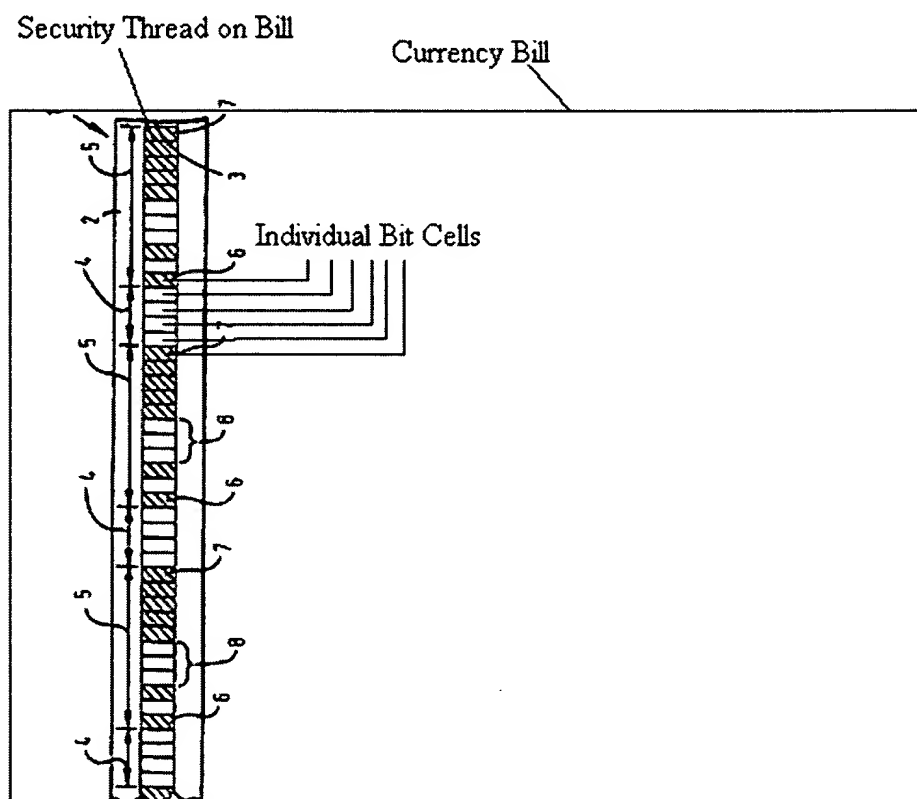
Claims 7-10, 12-17, 19-26, 28-29, 78, 81-85, 87-89, 146-148, 150, 151, 153, 154, 156, 157, 159, 161-163, 165-167, and 181-189 recite using a plurality of “closely spaced” magnetic sensors for processing currency. Neither McNerny, Crane, Jones, or any combination thereof disclose such a feature. Thus, the combination of references proposed by the Examiner does not teach or suggest all of the claims limitations of claims 7-10, 12-17, 19-26, 28-29, 78, 81-85, 87-89, 146-148, 150, 151, 153, 154, 156, 157, 159, 161-163, 165-167, and 181-189, and as such, claims 7-10, 12-17, 19-26, 28-29, 78, 81-85, 87-89, 146-148, 150, 151, 153, 154, 156, 157, 159, 161-163, 165-167, and 181-189 are believed to be in condition for allowance.

According to the Examiner, McNerny allegedly discloses “a high-speed currency bill evaluation device (10) that receives a stack of bills in hopper/input receptacle (12), an output receptacle (20 and 68) that receives bills after processing, a transport mechanism as shown in figure 2a, a magnetic scanhead (86), adjacent to a transport path, a cpu processor (302), rom and ram memories (318, 319), and optical sensors (80, 82, 84).” McNerny also allegedly discloses “comparing sampled data with stored master data, the cpu processor then determining based upon set threshold values whether the bill is authentic or not.” Allegedly, McNerny further discloses “handing multiple currencies from other countries as well as other documents such as food stamps, . . . that the scanhead is disposed transverse to the document transport path, . . . and that the bills are transported so that a long edge of the bill is the leading edge of the bill.”

The Examiner admits that McNerny does not expressly disclose that currency bills contain embedded magnetic security threads. The Examiner further admits that McNerny does not expressly disclose a magnetic scanhead that comprises several closely spaced magnetic sensors, as specifically claimed by the Applicants.

The Examiner, however, goes on to allege that Jones overcomes this deficiency in McNerny. The Examiner alleges that “Jones discloses a magnetic scanhead (10) that comprises several closely spaced magnetic sensors (11), as illustrated in figure 3.” The Examiner also alleges that “Jones’ magnetic sensors appear to be about 5mm or less distance apart from each other.” The Examiner has clearly misunderstood the teachings and functionality of Jones, which does not in any way teach a plurality of “closely spaced” magnetic sensors, as specifically claimed by the Applicants.

The Examiner states that Jones “provides and the motivation and teaching to use closely spaced magnetic detectors.” However, the Examiner cites only to Jones where the bit cell length is discussed. These bit cells are present within security threads on a scanned document. See Jones, Col. 1, lls. 48-65. An altered version of FIG. 1 of Jones demonstrates the orientation of the bit cells on the bill, as described by Jones.



Altered Version of FIG. 1 of Jones

Jones does not discuss the spacing between the magnetic heads 11. Therefore, it cannot be said that Jones teaches or suggests the use of “closely spaced” magnetic sensors. In fact, Jones expressly teaches away from “closely spaced” magnetic sensors when it discusses “practical limitations on the track width of a magnetic transducer” which necessitate the use of an array of magnetic heads. See Jones at Col. 1, line 65 to Col. 2, line 3. Furthermore, Jones states that “[i]t is preferable to decode a security thread of the kind shown in FIG. 1 or 2 by means of an array of magnetic heads disposed so that regardless of some skewing of the thread relative to the direction of movement of the security document. . . at least one channel and preferably each of a

plurality of channels develops a succession of signal excursions.” See Jones at Col. 4, lls. 27-33. Jones thus teaches the use of an array, but fails to teach or suggest the use of “closely spaced” magnetic sensors to ensure that at least one sensor intersects with the security thread. As such, Jones explicitly teaches away from the use of “closely spaced” magnetic sensors.

The Examiner also cites FIG. 3 of Jones as disclosing the use of “closely spaced magnetic sensors.” In doing so, the Examiner has misunderstood FIG. 3 of Jones. FIG. 3 is described as “a schematic representation of an array of magnetic heads.” Indeed, it is not meant to be taken literally – which would imply zero gap spacing between magnetic sensors. Furthermore, it is clear Jones does not disclose the use of “closely spaced” magnetic sensors in its discussion of FIG. 3:

FIG. 3 illustrates schematically an array 10 of magnetic heads. The magnetic heads 11 would be (in accordance with known practice) disposed across the path of the document so that the magnetic strip ideally passes at right angles to the line of heads.

See Jones at Col. 4, lls. 46-50. It is submitted that “closely spaced” magnetic sensors is not “in accordance with known practice.”

Applicant’s Declaration of Dr. Fred Jeffers demonstrates that the use of “closely spaced” magnetic sensors was not in accordance with known practice at the filing date of the present application:

Furthermore, Jones does not teach or suggest closely spaced magnetic sensors. As the Jones patent describes FIG. 3 as a schematic representation, one skilled in the art would not recognize FIG. 3 of Jones as teaching, or suggesting the use of closely spaced magnetic sensors or closely spaced non-inductive sensors. Furthermore, the sensors used in Jones are inductive sensors, wherein the sensitivity of the sensor is proportional to the number of wire turns around the core of the sensor. Because the magnetic field generated by a scanned security thread is small, it would require a significant number of turns in order to generate a sufficient signal for evaluation. The high number of turns would occupy significant physical space, such that one skilled in the art would not understand Jones to teach or suggest closely spaced magnetic sensors.

See Declaration of Dr. Fred Jeffers at ¶ 10. The Examiner has not provided a single reference which teaches or suggests “closely spaced” magnetic sensors, yet the Examiner claims that a reference which merely discloses an arrangement of magnetic sensors “in accordance with known practice” would include “closely spaced” magnetic sensors.

As the Examiner admits in the office action, McNerny does not overcome this deficiency because McNerny does not expressly disclose a magnetic scanhead that comprises several closely spaced magnetic sensors. Nor does the combination of Crane with McNerny and Jones render Applicants' claims obvious. Crane merely discloses a single-track scanhead and does not in any way teach an array of sensors and, as such, does not disclose, teach, or suggest Applicants' plurality of "closely spaced" magnetic sensors, being arranged generally perpendicular to the transport direction.

Claim 13 has been rejected as being allegedly unpatentable over McNerny in view of Crane and further in view of Jones and still further in view of Winkler (U.S. 5,394,992). As discussed above, the combination of McNerny, Crane, and Jones does not disclose, teach, or suggest a plurality of "closely spaced" magnetic sensors being arranged generally perpendicular to the transport direction. Winkler does not overcome this deficiency in the prior art. In fact, Winkler does not even mention magnetic sensors within its disclosure. Thus, the Applicants respectfully submit that a *prima facie* case of obviousness has not been made, and that claims 7-10, 12-17, 19-26, 28-29, 78, 81-85, 87-89, 146-148, 150, 151, 153, 154, 156, 157, 159, 161-163, 165-167, and 181-189 are patentable over McNerny in view of Crane and further in view of Jones and still further in view of Winkler under 35 U.S.C. § 103(a).

It is further submitted that McNerny, Crane, Jones, Winkler, or any combination thereof, fail to teach or suggest each and every element of new independent claims 169, 172, and 175. Each of the added independent claims 169, 172, and 175 contain the limitation that the "spacing between adjacent magnetic sensors being less than about one millimeter." The Examiner admits the McNerny does not teach or suggest the use of closely spaced magnetic sensors. Therefore it cannot teach "spacing between adjacent magnetic sensors being less than about one millimeter." Furthermore, it is submitted that Jones likewise does not teach this limitation for the same reasons it does not teach the limitation of "closely spaced" magnetic sensors." Jones does not discuss the spacing of its sensors, and FIG. 3 does not teach or suggest the use of "spacing between adjacent magnetic sensors being less than about one millimeter" for the same reasons it does not teach or suggest the use of "closely spaced" magnetic sensors. Therefore, it is submitted that independent claims 169, 172, and 175 are likewise allowable. Likewise, the remaining

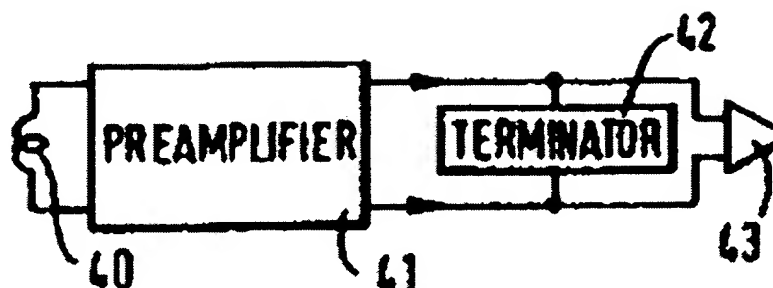
dependent claims are also believed to be allowable at least for the reason that they depend from allowable independent claims.

Additionally, all of claims 170, 173, 176, and 181-185 include the limitation of “non-inductive” sensors, and all of claims 171, 174, 177, and 186-189 include the limitation of “magnetoresistive” sensors. These limitations further distinguish these claims from the cited references which fail to teach or suggest the use of non-inductive or magnetoresistive sensors.

For example, McNerny expressly discloses a magnetic read head. See McNerny at Col. 8, lls. 43-58. Furthermore, McNerny expressly teaches that “as the dollar bill passes over the read head, the *induced electrical signal produced by the read head* will be characterized by two periods of irregular activity indicative of the passage of the leading and trailing peripheral areas of the magnetic ink bearing portion of the dollar bill.” See McNerny at Col. 9, lls. 35-40 (emphasis added). There can be no doubt that the magnetic sensor disclosed in McNerny is an inductive sensor.

Crane also expressly teaches an inductive sensor within its detector circuit 11. As described in Crane, “[a]s a metal is brought in proximity to the metal detecting circuit 11, the inductor  $L_1$  *causes eddy currents to be induced in the metal, thereby changing the reactance of inductor  $L_1$*  and causing the metal detector circuit 11 to change its resistance as reflected on pins 2 and 3 causing the oscillator 44 to change frequency.” See Crane at Col. 3, lls. 2-8 (emphasis added).

Jones also teaches an inductive sensor. It describes “*magnetic transducers associated with the channel are shown as a coil 40* connected to a pre-amplifier 41 driving a terminator 42 across which is coupled an amplifier 43 having a low pass characteristic.” See Jones at Col. 5, lls. 55-59 (emphasis added). A portion of FIG. 5 is reproduced below:



The coil symbol of element 40 represents an inductive component. See Jeffers at ¶ 9. Therefore, it is clear that Jones teaches only inductive sensors.

Accordingly, none of these references teaches or suggests the non-inductive magnetic sensors limitation of claims 170, 173, 176, and 181-185, nor the magnetoresistive sensors limitation claimed by claims 171, 174, 177, and 186-189, and hence these claims are believed to be allowable. Likewise, the remaining dependent claims are also believed to be allowable at least for the reason that they depend from allowable independent claims.

It is further submitted that Pitrowski et al. (U.S. Pat. No. 4,499,515), cited by the Examiner during the December 7, 2006 interview, in combination with McNerny, Crane et al., and Jones does not render the added claims obvious. Pitrowski et al. is not directed towards a currency evaluation device, but rather memory on magnetic recording media, and hence is non-analogous art. Moreover, there is no teaching or suggestion for the combination of Pitrowski et al. with McNerny, Crane et al., and/or Jones, let alone a teaching or suggestion to somehow combine these references in a manner so as to arrive at the claimed subject matter.

### 3. CONCLUSION

It is the Applicant's belief that all of the claims are patentable and are in condition for allowance, and action towards that end is respectfully requested. If there are any matters which may be resolved or clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney at the number indicated.

A check in the amount of \$6,020.00 is enclosed for the Amendment and Request for Continued Examination. It is believed that no further fees are due; however, should any additional fees be required (except for payment of the issue fee), the Commissioner is authorized to deduct the fees from Jenkins & Gilchrist, P.C. Deposit Account No. 10-0447, Order No. 47171-00271USP1.

Respectfully submitted,



2/7/07  
Date

Paul R. Kitch  
Reg. No. 38,206  
JENKENS & GILCHRIST, P.C.  
225 West Washington Street, Suite 2600  
Chicago, IL 60606-3418  
(312) 425-3900 – Telephone  
(312) 425-3909 – Facsimile

Attorney for Applicants